BTEC Assignment Brief

Qualification	Pearson BTEC International Level 3 Diploma in Engineering Pearson BTEC Level 3 International Diploma in Electrical and Electronic Engineering Pearson BTEC Level 3 International Diploma in Digital Engineering Pearson BTEC Level 3 International Extended Diploma in Engineering Pearson BTEC Level 3 International Extended Diploma in Electrical and Electronic Engineering Pearson BTEC Level 3 International Extended Diploma in Digital Engineering Pearson BTEC Level 3 International Extended Diploma in Mechanical Engineering
Unit number and title	**18 Electrical Power Transmission and Distribution**
Learning aim(s)	**A:** Investigate the operation of thermal and water-cooled nuclear reactor power generation that supplies electricity to the national grid
Assignment title	The operation of thermal power and nuclear power stations
Assessor	
Issue date	
Hand in deadline	
Vocational Scenario or Context	You are working as a final year apprentice technician for an electrical engineering organisation that generates and transmits electricity. Your job includes a range of activities that are carried out in power generation stations. Your supervisor has asked you to investigate thermal and nuclear power generation to demonstrate your understanding of how electricity is generated.
Task 1	You are going to investigate thermal power and nuclear power generation including public perceptions of both and environmental concerns. You need to prepare a written report evaluating and comparing one type of thermal power and one type of nuclear energy power station, including how the respective plants are constructed and operate. **To do this:**

	You will first need to carry out some research into one type of thermal energy power station (coal, oil or gas fired) and one type of nuclear energy power station (pressurised or boiling water reactor). You then need to: Use your research to produce a report that compares the two types of power generation in terms of: a. design and operation of each power station researched including the key features of each and how the fuel is used to turn the turbines b. efficiency of operation c. public perception, environmental concerns and safety records, You should use real-life examples to support your analysis and evaluation.
Checklist of evidence required	A report detailing the operation and construction of nuclear and thermal power stations, their perceived benefits and drawbacks.

Criteria covered by this task:	
Unit/Criteria reference	To achieve the criteria you must show that you are able to:
A.D1	Evaluate, using language that is technically correct and of a high standard, thermal and nuclear power stations, including environmental concerns and public perceptions of each.
A.M1	Compare the operation of a thermal and a pressurised or a boiling water nuclear power station.
A.P1	Explain the operation of a thermal energy power station.
A.P2	Explain the operation of a pressurised or a boiling water nuclear power station.

Sources of information to support you with this Assignment	Websites edfenergy.com/energy/nuclear-new-build-projects EDF Energy information on nuclear new build projects. onr.org.uk/new-reactors/faq.htm#q3 Generic Design Assessment information from the Office for Nuclear Regulation. bbc.co.uk/schools/gcsebitesize/science/add_ocr_gateway/radiation/fissionrev2.shtml How power stations work. nei.org/Knowledge-Center/How-Nuclear-Reactors-Work Nuclear Energy Institute information on how nuclear reactors work. electronics-tutorials.ws

	allaboutcircuits.com **Above are some examples of websites. Further useful resources may be found at** qualifications.pearson.com/en/support/published-resources.html#step1